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ABSTRACT

This paper describes a multidimensional staff development program implemented by the Ames (Iowa) Community Schools, involving 11 schools, 350 teachers, and 5,000 students. Three governance options in staff development were established: the Individual Growth Fund which supported teachers in defraying the costs of individually selected staff development activities, school-wide action research, and a district-level study of models of teaching language arts that favor literature-based approaches. Faculties organized themselves into study groups to increase collegial interaction in the study of teaching and curriculum and to implement teaching strategies and curriculum changes, and consultative services were provided. Interviews with 64 teachers revealed that the Individual Growth Fund, the action research initiative, and the models of teaching language arts initiative had resulted in worthwhile changes and should be continued. Results indicated that: (1) school-wide action research was effective in generating initiatives and satisfaction and in improving cohesiveness; (2) a carefully articulated and supported centralized initiative can succeed; (3) well-designed initiatives can be implemented during the first year, rather than requiring use of a gradualistic approach; (4) age was not a factor in satisfaction or implementation of staff development; and (5) there was a link between student achievement and staff development. (JDD)

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ED 369 751

Exploring Staff Development Theories: The Ames Study

by

Bruce Joyce, Emily Calhoun, Nina Carran, and Cal Halliburton

Expressions of theories, concepts, and opinions, and reports both of research and of program evaluations swirl about in staff development as we search for optimal designs for programs. Everyone wants to generate the most effective and useful programs possible, but nailing down critical issues is difficult and deciding among alternative courses of action is demanding. To a large extent this is because knowledge-production in staff development comes slowly and many important issues are debated, sometimes hotly, in an environment where hard evidence is scarce. To a degree the slow pace of knowledge production is due to the inherent messiness of the area. Essentially, the only available research laboratory is the field where staff development programs are implemented. "Intermediate" and interacting variables abound, and programs are modified continually in the course of implementation. Yet, we must continue to weigh the research we have and, as we create programs, try to test their assumptions as we proceed by embedding research in the program.

A Comprehensive Program with Embedded Studies

Thanks to the energy of the professional Staff of the Ames, Iowa Community Schools and the policy support of its exceptionally fine board of education, we have had the opportunity to study a multidimensional program through implementation and including some aspects of student achievement.

The objective of this paper is to describe and report the productivity of this extensive staff development/school improvement program in this school district of 11 schools, 350 teachers, and 5000 students and interpret the findings in terms of several of the "theses" that are argued as programs are planned. The Ames staff development program provided the opportunity to observe the effects of three governance options in staff-development in terms of both the types of objectives generated, the activities pursued, the implementation of innovations, and the effects on students. The 1992-93 academic year, when all three governance options were operating robustly in the nine elementary schools, is the time frame of the study. The formative evaluation syetem permitted the collection of information relevant to several of the common theses that are currently argued in the staff development field.

A Cornucopia of Theses

On Motivation, credibility, and "buyin" --

Thesis MCB1: Start with a group of enthusiasts, and, when the others see what they are doing, they will buy in.

Corollary thesis MCB2: Action research is best conducted by individuals and small groups.

Thesis MCB3: Schoolwide action research knits the faculty and gets results for children.

Thesis MCB4: Commitment follows competence rather than preceding it.

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On central planning --

Thesis CP1: Carefully articulated initiatives in curriculum and instruction generate colleagueship and bring about changes in curriculum and instruction that are satisfying to teachers and effective for students.

Thesis CP2: Centralized initiatives are doomed to failure because of resistance, legitimacy, and lack of "buyin."

On the culture of the school --

Thesis CS1: Begin with the development of colleagiality, then initiatives will emerge.

Thesis CS2: Begin with initiatives and generate collegiality through action.

On time and the culture of the school--

Thesis TCS1: The implementation of an initiative in curriculum, instruction, or technology takes three years or more.

Thesis TCS2: Well-designed initiatives can be implemented during the first year.

Thesis TCS3: Changing the culture of the school takes from five to ten years.

Thesis TCS4: Well-designed initiatives can change the culture of the school immediately in certain ways, and by steady increments create self-renewing schools and school districts.

On age and experience

Thesis A1: Age decreases motivation and the stresses of teaching lead to "burnout."

Thesis A2: Maturity increases strength as learners and problem-solvers.

On technical assistance and research

Thesis TA1: To get "moving" most schools need technical support, especially to bring the research base to bear on problem-solving.

Thesis TA2: Knowledge is personal and situation-specific. External sources provide little of value to local problem-solving.

On Student Achievement and Staff Development

Thesis SDSA1: There is a link between student achievement and staff development.

Thesis SDSA2:There is no link between student achievement and staff development.

On Variables and Factors

Underlying each thesis is attention to specific sets of variables that make that thesis attractive to its proponents. Proponents of individually-oriented options (MCB 1,2) focus on the energy that can come from a sense of efficacy and the utilization of personal/professional knowledge of self and one's specific needs. Those who focus on variability in personal motivation believe that there will be a reflection of that variability in the effectiveness of personal choice initiatives.

Proponents of school-generated initiatives (MCB3) emphasize the faculty's knowledge of their situation and their desire to improve it realistically. Pessimistic views of site-based approaches and, especially, "whole school" approaches stem from attention to the difficulties involved in creating problem-solving groups. The thesis that initiatives best begin with small groups of enthusiasts (MCB1) emphasize the "credibility" and social influence of faculty members and avoiding losses of energy caused by less enthusiastic members of the group. Those who recommend schoolwide action research (MCB3, TA1) rely on the technology of collegial action research to bring about schoolwide inquiry and, equally, point to the necessity for concerted action if student learning is to be affected. Proponents of well-designed central curricular initiatives (CP1) rely on the technology of training and group organization whereas opponents (CP2) point to the antagonisms between supervisory personnel and teachers and the divided cultures of the school district. Some question the sheer legitimacy of central action as a violation of professional rights (TA2). Proponents of the "change the organization first, then let initiatives emerge" stance rely heavily on the technology of organizational development and believe that colleageship will generate school improvement efforts. Those who believe in creating colleageality through action (CP1, TA1, MCB3) believe that actions provide a better center for organizational development than does attention to group process alone. Differing theses about time to implement initiatives and change the culture of the school emphasize differing views about the strength of staff development technology and the adaptability of the existing culture. Proponents of the shorter time frames are more optimistic about both, while proponents of the longer time lines are less optimistic. The "burnout" theorists (A1) emphasize the stresses of work, while the optimists (A2) emphasize the benefits of maturity and problem-solving. Those suspicious of external sources (TA2) emphasize the uniqueness of each workplace, while proponents of technical assistance (TA1) and the application of research emphasize the need for decentered facilitation and the generalizability of the knowledge base. The competing theses about whether there is an established link between staff development and student achievement (SDA1,2) are due to differences about the kinds of studies selected for review, especially whether any but large-scale studies using norm-referenced tests will be admitted to the body of work examined.

Ideology is also important in what is advocated. Particularly important are differing views about what is proper in relationships among levels of the organization. The belief that initiatives generated from without the school or individual teacher necessarily denigrate teachers and disempower them leads toward the position that initiatives should be generated by individuals or schools. The belief that the proper role of central agencies is to create a healthier workplace and provide opportunities for growth leads to a more sanguine role for central offices. Concerns with equity in learning opportunities for children leads toward the belief that a proper role of central offices is to generate initiatives to increase and preserve equity by generating initiatives that improve the learning environment for all children.

The Focus of the Study: Three Types of Governance and Their Underlying Rationales

The district has created strong and balanced support for staff development generated by teachers as individuals, by school faculties in the action-research mode, and by the district as a unit. District policy has acknowledge the measures of "truth" underlying often-competing theses. The

current theses in staff development provide rationale for all three governance modes. The district policy supports the energy of individuals and generating options where the locus of control is with the person who will pursue a course of action, making the actions congruent with the individual's perceptual world. Individually-generated staff development acknowledges the division of the workplace into units (classrooms) where individual teachers need to use their perceptions and strengths to create innovations to which they can be committed. Whole-faculty generated action research is supported because the curricular and social climate dimensions of the school can be addressed in a way not possible through individual action alone. Further, schoolwide action research directly addresses the goal of developing shared-governance modes and increasing the capacity of the faculty to inquire into and solve problems requiring concerted, democratic action. The district-wide initiatives emphasize the importance of curricular coherence and the development of faculties who embrace professional citizenship in the larger sense of belonging to a community whose children deserve equity in educational opportunity and a common core of knowledge and skills.

By supporting individually-oriented, site-based, and district-generated initiatives simultaneously, the district has created a condition where information relative to the success of all three can be obtained and applied to the debate about several of the currently-competing theses. Research was not the objective of the program, but is a side-effect of the multidimensional program coupled with a very extensive formative evaluation program designed to provide information relative to the improvement of all three dimensions of the program.

The description of the program in these pages is taken from a memorandum to the faculty in February, 1992 that accompanied sessions with the district and school faculties to provide the rationale for the plan. The memorandum was edited somewhat for brevity. Sections enclosed in brackets were modified to increase clarity for readers of this paper who are unfamiliar with the context. Sections in parentheses provide information about background events. The original document of rationale is provided to help the reader "get the flavor" of the district policymakers' attempt to help all personnel understand why the program was being undertaken.

The school as a learning center for faculty and students: Beyond traditional staff development

How do we proceed? We face a world where social change and technological advance will Make curriculums and ways of teaching age far more rapidly than in the past. The result is that the quality of education of our children will increasingly depend on our own continuing self-education.

We need to build a setting where our study of what to teach and how to teach it are a regular part of our jobs--essentially to make schools learning centers for ourselves and for the children. Thus, we have, once again, to reach beyond what was regarded as normal and satisfactory in the recent past. Our study of curriculum and instruction need to be recreated.

In the past, school districts invested very little in opportunities for study by teachers or administrators. Curriculum committees did their work and then new books appeared with one or two days set aside to think through the changes and learn teaching strategies needed to use them. Brief workshops conveyed the ideas that were fashionable. "Followup" activities were haphazard.

We are now building conditions that will lay the base for far more stimulating conditions for professional life than those represented by the staff development and school-improvement practices common in the nation.

Three professional spheres

The concept guiding our effort involves seeing ourselves in three roles as professionals. One is as individuals, another is as school faculties, and the third is as the faculty of the district. These are our professional spheres of activity. In each one we will study what we are doing and make initiatives for improving education. As a district we support our efforts in each sphere by allocating resources, arranging time, and establishing structures that facilitate colleagueship.

On time and colleagueship

One of our arrangements is for regular weekly time for faculties and study groups to meet. Every Wednesday from one-thirty to four p.m. is set aside for developmental activities. Action research plans can be made, study groups can focus effort on the language arts and learning strategies, and curriculum planning committees can do their work without interrupting instructional time. The clear time forcollaborative work over these areas should bring us closer together as a community of learners learning how our students can learn better.

Support for individuals

Under the Iowa Education Excellence program, Phase III the Individual Growth Fund has been set up. Teachers are able to select activities of their choice and receive support of up to $465.00 to defray the cost of the activities. Individuals will select activities according to the dictates of their professional judgment.] (The state and local education associations were active in designing this initiative and persuading the state government to support it for all teachers in the state.)

Support for school faculties

[Also under funding provided by the Iowa Excellence Program, to support schoolwide action research a budget of $350.00 per faculty FTE is provided for each school faculty to help them in their research and to support the staff development needed for their initiatives. Thus, a school with 30 faculty members receives $10,500.00 per annum to support their decisions.] Schools are asked to elect action research facilitation teams and lead the faculties in the study of the school and the generation of initiatives to improve it. (Again, the teachers' organizations were active in the design of the initiative and the procurement of funding for it.) The classic action research model, emphasizing the development of shared leadership, the collection of data relative to the health of the school, the generation of initiatives (one at a time) to improve aspects of student learning, the implementation of those initiatives, and the study of effects on students, will be used.

Support for District-level Initiatives

[The district initiatives include the study of models of teaching applied to curriculum changes in the language arts that favor literature-based approaches with close connections between reading and writing. In addition, an extensive school-community program "Just Read" was begun to increase the amounts and quality of independent reading by students.] (Teacher/administrator coordination and support teams were formed to articulate the curriculum and to arrange support). The two models of teaching selected for initial study are
"inductive thinking in cooperative groups" and "concept attainment," both basic approaches to teach students to build concepts, in this case, concepts that enhance reading comprehension and, through the reading-writing connection, comprehension of strategies for writing.

In all three cases we work together to implement the changes, the cadre (see below) will provide support, and the study group structure will pull us through the struggle for thorough implementation.

On colleagueship: a cadre to support all spheres

Another effort that is under way is the organization of a cadre who will study curriculum, teaching, and school improvement. All principals are members, as will teachers who represent a range of specialties. The group has been studying several models of teaching and, as you know, has been working with the Just Read and Write initiative.

For the long term the cadre needs to have the capability to provide service to the building leadership teams and faculties. Its functions include:

1. Providing training on generic teaching skills and a wide variety of models of teaching.

2. Providing training on the implementation of curriculum areas as content and processes are changed.

3. Building the capacity of leadership teams to organize the faculties into productive problem-solving teams, including the organization of study groups for the implementation of training in curriculum and instruction.

4. Developing training materials and procedures, including creating training for innovations that emerge as priorities.

5. Applying understanding of the change process to curricular and instructional innovation and helping all personnel understand change.

6. Studying implementation and modifying procedures accordingly, and facilitating the study by teachers of the effects on students.

On study groups and colleagueship

All faculties have organized themselves into study groups. The study group structure is to increase colleagial interaction in the study of teaching and curriculum and, especially, to implement teaching strategies and curriculum changes. Each faculty has organized agroup of action research facilitators. These folks will work with our action research consultants to study the action research process and how to lead it. (End of document.)

Consultative Services

The cadre of teachers and the principals of the schools received extensive training on teaching strategies and the language arts and the processes of offering staff development and consultation to their colleagues. School leadership teams and faculties studied how to conduct action research. Principals studied the generation of school renewal efforts and action research. The language arts team, cadre, and teachers studied the teaching of reading and writing. Consultants helped faculties study models of teaching until the cadre was ready to assume that work. In all areas, the consultants were to "work their way out of business," as cadre members gained the confidence to step into the support role.

Design of the Formative Evaluation System

In a real sense, the entire program was conducted as district-wide action research, with school-wide action research and the inquiry of individuals and small groups nested therein.

The evaluation component was designed to obtain multiple sources of information about reactions to, implementation of, and effects of each of the components initiatives of the program:

1. The interview study: perspectives of teachers.

The perspective of the teachers about the effects of the initiatives on themselves, the implementation of each, and effects on students and the organizational climate of the schools were obtained through interviews (The Teacher Satisfaction and Productivity Interview) with a sample of teachers in each of the elementary schools. A "school climate survey" was administered to all personnel.

2. The ethnographic study: on-site participant-observation.

One of the consultants spent over 70 days in residence during the year. The consultant was responsible for supporting the action-research facilitation teams and providing service to school faculties, cadre, and policymakers on the language arts and models of teaching component. In addition, the consultant was responsible for studying progress in the action research and models of teaching/language arts initiative. Perspectives of principals, leadership teams, and central office personnel were also obtained through interviews and the observation of meetings. Interviews with participants, observations of teaching, and formal and informal discussions with teams, study groups, and individuals provided other information. Quantitative data were obtained through records of implementation of program components included logs of use, records of student reading, action research plans, observations of teaching, and a school climate questionnaire survey administered to all teachers. The problems inherent in combining the support and observational roles were counterbalanced by the access to the process, the addition quantitative data, the comparison of results with those of the other components of the evaluation, and comparison with a smaller qualitative study conducted by one of the teachers in the district.

3. The formal study of quality of writing.

An intensive study was made of quality of writing in grades four, six, and eight by collecting samples of expository, persuasive, and narrative writing from all students at the beginning and end of the 1992-93 school year and submitting them to a content analysis for quality and analyzed against a baseline obtained the prior year and compared to the results of the National Assessment of Writing Progress.

Specific details of the components of the formative evaluation program will be discussed as the results of each component are presented. We will begin with the perceptions of the teachers, proceed to the ethnographic study, then discuss the measures of student learning in writing, finally returning to the relevance of the study to the current theses relevant to policy in staff development.

Results: The Teacher Satisfaction/Productivity Interviews

The interviews were designed to explore the teachers' perceptions of the content of the three initiatives and the satisfaction and productivity that emerged from each of them. Thirty-five questions were asked of each teacher and their general opinions were solicited through open-ended questions.

The interviews, done between May 17 and June 7, 1993 lasted from about 15 minutes to two hours, were conducted by four persons: two consultants from outside the district, one teacher who is past president of the Ames teachers' association, and one representative of the central office. The results did not differ by interviewer.. Sixty-four teachers were interviewed, made up of a random sample of teachers was drawn from the faculties of each of the nine schools (from 5 to 8 per school depending on faculty size). Altogether there were 163 full-time teachers assigned to classrooms and support roles in the nine elementary schools. Thus, 39% of the classroom teachers were interviewed.

Years of Teaching Experience

There was one first-year teacher and one veteran of 36 years, with the rest distributed between as shown below.

Years of Teaching Experience

Years	Number
1-5	5
6-10	9
11-15	17
16-20	15
21-25	7
26-30	5
31-36	5
NA	1

The distribution approximates that of the entire staff of the elementary schools.

Four teachers are completing their first year of teaching in the district and one is completing the 34th year. The distribution appears below.

Experience in Ames

Years	Number
1-5	20
6-10	12
11-15	11
18-34	19
Not Av.	2

The broad distribution of experience and, thus, age will allow us to provide information about the current theses in the field about the influence of age on receptivity to initiatives as an offshoot of the study.

Twenty-five of the 64 received their bachelor's degrees from the University in the town the district is located in. Nineteen others received their undergraduate education at other universities or colleges within the state. Ten others were educated in the Midwest. The remainder were undergraduates at institutions scattered from coast to coast. Thirty-three of th those interviewed have master's degrees and three hold doctorates. Nearly all expect to continue teaching until retirement.

Three expressed ambitions in administration and five to become staff development or curriculum specialists.

Teacher Perceptions of Impact: Cross-Initiative Comparisons

The interview schedule asked the 64 teachers to discuss their perceptions of each program component initiative in detail. For cross-initiative comparisons, the critical items were four questions tapping teachers' estimates of the worth of the components; items that were parallel for each initiative: whether the initiative should be continued in Ames, whether they would recommend it to another school district, whether there were positive effects for students and, their general feelings about the component. To interpret the results, it is important to know that 12.5% of the sample did not make use of the Individual Growth Fund (IGF) initiative at all and 18.5% used the IGF money to develop instructional plans or materials and thus did not use the resources for staff development. Another 18.5% had not yet used the initiative when the interviews were conducted but planned (and did) use it in the summer. Many of those persons who either did not use the initiative or who used it to purchase materials declined to comment about the worth of the initiative.

Should the Initiative be continued? (For IGF, "Would you do it again?")

Table 1 contains the results of the question about continuing the initiative.

Table 1

Comparison of Initiatives: Should the Initiative be continued?				
	Yes N (%)	No N (%)	Don't Know or No Comment	Total N
IGF	38 (59.4%)	4 (6.3%)	22 (34.4%)	64
ACTION RES.	49 (78.4%)	3 (4.7%)	12 (18.7%)	64
MODELS/LA	61 (95.1%)	1 (1.6%)	2 (3.1%)	64

Clearly, the majority favored the continuance of all three initiatives, but the largest percentage favored continuing the Models of Teaching/Language Arts initiative, although a half-dozen felt it should be modified, with the next largest favoring the continuance of the Action Research initiative.

Would you recommendthe initiative to another district? (Or person, in the case of the IGF)

Table 3 displays the results of the pertinent questions.

Table 3

Cross-Initiative Comparison: Recommend to Another District (Person)			
Initiative	Yes N (%)	No N (%)	Unsure,Missing or No Comment N (%)
IGF.	36 (56.3%)	0	28 (43.7%)
ACTION RES	50 (76.6%)	3 (4.7%)	9 (14.1%)
MODELS/LA	56 (87.5%)	3 (4.7%)	5 (7.8%)

Again, the majority would recommend each of them. The differences favoring the Models of Teaching/Language Arts and Action Research Initiatives were similar to the responses to the question asking whether the initiatives should be continued.

Did the Initiative have an effect on students?

Table 4 displays the results of this question.

Table 4

Satisfaction/Productivity Interviews Cross-Initiative Comparison: Perceptions of Effects on Students				
Initiative	Yes N (%)	No N (%)	Unsure N (%)	Missing or NC N (%)
IGF	35 (54.7%)	1 (1.6%)	2 (3.1%)	26 (40.6%)
AR	48 (75%)	8 (12.5%)	2 (3.2)	6 (9.4%)
M/LA	54 (84.4%)	3 (4.7%)	2 (3.1%)	4 (6.3%)

The results closely approximated those of the other two questions designed to obtain an assessment of the teachers' general perceptions of the three initiatives. The findings are pertinent to the current theses on staff development pertaining to indivuidual motivation, "buyin," and the role of the district offices in generating initiatives. In the case of Ames, the perceptions of the teachers certainly do not suggest that the district-wide initiative was regarded as unworthy by very many of the teachers. Also, the schoolwide action research, which is necessarily more complicated to carry out than the individual teacher-oriented initiative, is apparently held in high esteem by more of the teachers than is the IGF program.

Feelings About the Initiatives (Asked as "How do you feel about .....?")

Table 5 contains the results.

Table 5

Satisfaction-Productivity Interviews:
"How do you feel about ...?"

	Good/O.K.	Indifferent	Worse	Missing	
Initiative	n (%)	n (%)	n (%)	n (%)	n (%)
IGF	41 (61.4%)	1 (1.6%)	0	22 (34.4%)	
AR	51 (79.3%)	8 (12.5%)	1 (1.6%)	4 (6.3%)	
LAMOT	61 (95.3%)	0	1 (1.6%)	2 (3.1%)	

The results are in line of those of the other three questions. Their specific interest is because this question asked for a general personal response. Again, the two collective components were apparently viewed very positively and the IGF initiative was viewed as positive in terms of general feeling by three out of five persons.

Consistency of Response

Cross-tabulations were made to determine the consistency of responses within and across initiatives and there was great consistency. For example, just two of the persons who reported good or excellent feelings toward the Models of Teaching/Language Arts initiative indicated that it should not be continued and just one indicated that it should not be continued in Ames. The picture was similar with respect to the Action Research initiatives. Only four of the 42 who indicated good feelings about it thought it had had no effects on children. Three of the five who indicated poor feelings thought it had had no effect on students. With respect to the IGF, where of the 41 who indicated positive feelings, 33 thought it had benefitted stuudents. Also, almost all of those who did not ansrer one of the IGF questions did not answer the other three.

Although these overall results of the comparison of responses to the three initiatives are somewhat different from what many might expect -- the high approval of the central-office initiative and the considerable support for the school-wide action research, the real puzzle is the large number of persons who did not express direct and positive support for the IGF. It is puzzling that one in eight did not use the initiative at all. It is a bit less puzzling that another one in five used the resources for preparation. It is surprising that so many did not answer positively that the initiative should be continued or recommended. Also, nearly all of those who did not use it or comment on it were very positive toward the other initiatives.

Estimated Changes in Classrooms

The open-ended questions enabled the teachers to speak in their individual terms and from their perspectives. Generally, they described changes in instruction, in students, and in instructional strategies and materials, and in the effect on themselves, including their morale. Overall, specific and positive changes were mentioned

For the Individual Growth Fund Initiative by 26 teachers

For the Action Research Initiative by 39 teachers

For the Language Arts Initiative by 49 teachers.

Ten teachers indicated that there were changes from the IGF initiative but did not specify the change. Twenty eight did not indicate that any change had occurred from the IGF.

Seventeen teachers did not mention a change attributable to the AR initiative and eight believed their had been a negative effect (probably relating to their own discomfort with the process).

Six teachers indicated that there had been a negative effect from the MOTLA initiative.

Estimated Effects on Students

Positive Effects:

IGF	35 (54.7)
AR	48 (75.0%)
MOTLA	54 (84.4%)

Some of the teachers had not yet used their IGF funds and some of the schools, as we will see, were not at a stage of implementing initiatives, whereas the MOTLA initiative was in full-swing with teaching strategies that are designed to affect student thinking and achievement being used regularly.

Experience in Teaching and Responses

Cross-tabulations were made between years of teaching experience and the four variables with respect to each initiative. Thus, 12 comparisons were made. In all twelve cases the distributions fitted almost exactly. In other words, experience does not appear to be a factor influencing response to any of the three components of the program.

The Specific Initiatives

The Individual Growth Fund Initiative

Most of the data about the IGF was generated in the May/June round of interviews. The set of questions related to the IGF were designed to explore what individuals did with the opportunity, whether there was a subsequent impact on the classroom environment, perceptions of influence on student learning, and their satisfaction with the initiative.

Use and Selection of Options

Six used the resources to defray the expenses of taking a university course. Eighteen (28.1%) attended conferences. Twenty-one (32%) attended a workshop or series of workshops. The others, as described earlier, made preparation for teaching through planning or the making of instructional materials or did not use the funds.

Credentials and graduate credit influenced only four persons in their choice of options. About one-fourth reported that district initiatives influenced their choices. The influence of other teachers was mentioned rarely. About half reported that the experience was congruent with the goal they had when making the selection. Most of the others were non-committal about goal-congruence.

Effects

The teachers had a hard time pinning down changes from the experience.

Few of the teachers could respond interpretably to the general question, "What happened as a result of your experience.? Ten mentioned the production or introduction of instructional materials, but many made vague or general comments. Asked about differences in their classroom as a result, 26 (40.6) percent were able to identify specific changes in instruction, materials, or students, but the rest were unspecific, mentioned nothing, and four said that there had been no effect.

With respect to effects on student learning, 35 (56.3%) said there had been positive effects. However, only 14 persons could identify the cause of those effects.

Summary: Teacher impressions of the Individual Growth Fund

Most of the teachers liked the initiative and many appeared to have reasonably clear purposes, tried to select options that would pay off, and felt the component was, for them, relatively satisfying and productive. However, many of the users were had difficulty providing specific information. For them, it was a personal experience and communicating about it was relatively difficult. The posititiveness on the part of the majority encourages us to believe that the initiative can be polished and made even more successful.

The Schoolwide Action Research Initiative

The action research initiative had been in full swing for about a year when the round of interviews occurred, although there had been planning meetings the year before (1991-92). By that time all the faculties had been working their way toward shared decisionmaking, making agreements about what to study, trying to generate initiatives, and learning to study implementation and effects.

The interview guides were designed to obtain the perceptions of the teachers about what had been accomplished and how they felt about it. When examining the responses, it may be helpful to consider that a major impetus for the initiative came from the state and local teachers' organizations, which offerred some fiscal and contributed much moral support for the initiative and regarded the project as a pilot for the state and region.

Purpose of Collective Action Research

Asked "Why do you think the district moved into the area of collective action research?" nearly half (30) of the teachers mentioned the development of greater control and accountability over the program as the primary reason. Increased collaboration in research activity were mentioned by 15. Just 6 singled out benefit to the students as the goal. Four said it was because it is "trendy," one that it would work them harder, and eight said they didn't know.

"Describe the Action Research Goal in your building."

Twenty nine (45.3%) described the goal in terms consistent with the goal adopted in their school action research plan. Eighteen (28.1%) described a goal not in the action research plan. Eight said they didn't know, eight made negative comments about the process, and one didn't comment.

"What happened in your school as a result of action research?"

Forty eight (75.0%) mentioned positive things for students or teachers -- better learning opportunities for the students and closer colleagueship for the teachers. Eight mentioned negative things, largely for teachers. Three said they didn't know and the remaining five indicated mixed reactions.

"What happened in your classroom as a result of action research?"

About three fifths of the teachers thought there had been positive effects and the others felt there had been no changes or negative ones. Positive effects on materials (17), teachers (11), and students(11) were mentiioned most frequently. Altogether 61.9% mentioned those positive effects. Fifteen (23,4%) reported that there had been no change and 9 made negative comments about the effects of the initiative on the classroom. However, the general question, "Has action research had an effect on your students" resulted in 75% positive responses.

Summary: Perceptions of the Action Research Initiative

Again, most of the teachers expressed positive feelings and believed that worthwhile changes were taking place. However, a certain number had mixed or even negative responses. We believe the struggle to reach shared-decisionmaking, the confrontation with data about student progress, and the problems associated with learning to make collective decisions about actions to take are reflected in these data. The fact that so many were not clear about the action research plans is a case in point, for those plans were arrived at through collective study and action and were very public throughout the school. As we deal with the analysis of action research plans and the observational data about the process, we will comment further on what we believe is a necessary struggle. Overall, however, from the perspective of most of the teachers, the action research is progressing nicely.

The Language Arts\Models of Teaching Initiative

The content of the initiative emphasized the two models of teaching, concept attainment and inductive thinking in cooperative groups, and the reading-writing connection. The models were used to help students to analyze literature to discover the strategies writers use to communicate and then help the students apply those strategies in their writing.

Teacher Perceptions of the Purpose, Impact, and Satisfaction Generated by the Initiative.

The May/June round of interviews provided the teachers with the opportunity to explore the complex, district-initiated project on curriculum and instruction in the language arts. The initiative gave special emphasis to the reading/writing connection and how to use conceptually-oriented models of teaching to further that connection.

The interviews began with a question about the overall objective and proceeded to explore results, especially impact on the classroom environment and the students, and concluded by eliciting overall feelings about the project.

One question explored the teachers' understandings about the rationale behind the initiative.

"Why do you think the district moved toward the Integrated Language Arts using the Inductive and Concept Attainment Strategies?"

About three-fifths mentiioned curricular and instructional improvement:

To promote thinking skills	10 (15.6)
Curriculum and Instruction	18 (27.9)
To try to reach all students	10 (15.6)

Seven (10.9%) said they were unsure about the purpose..
Twelve (18.8%) said it was because of a research interest by the district administration. The others did not respond to the question in an organized fashion.

"What has happened in your school as a result (of the initiative)?"

Forty three ((67.2%) mentioned wholly positive items, including increased collaboration among teachers (24 persons) and instruction (13 persons). Seven teachers mentioned negative items, all having to do with the collaborative process. Fourteen (21.9%) mentioned both positive and negative items with respect to collaboration and instruction.

"Are there changes in your classroom?"

Positive Outcomes

Three quarters mentioned positive changes in materials, students, themselves, and student learning. 21 teachers singled out materials as a major change. Seven teachers said there had been no change in their classroom and four mentioned changes they believed were negative in impact.

"How do you feel about the Models of Teaching?"

Fifty nine of the sample said they feel "good or o.k." about both models. Missing data accounted for four of the five others. One felt "o.k" about one model and "worse" about the other.

Summary of Perceptions: The Models of Teaching/Language Arts Initiative

Curricular and instructional improvement was the goal of the policymakers, and it is interesting that there was any question about that, given the constant reiteration of the purpose and continuous training in the language arts and models of teaching designed to promote thinking and raise student learning. Also, 80% reported that they were regularly using new materials in the classroom as a result of the initiative and 75% that they were using the new teaching strategies once a week or more, which means about all the teachers with classroom assignments (one third are resource teachers or teachers of subjects other than the language arts)! And, of course, nearly all were very positive about the initiative in general and believed it was affecting student learning positively and all but a tiny fraction felt positive about both models of teaching. Clearly, a district initiative can have a good reception. The prognosis is good for future initiatives in curriculum and instruction, provided they are carefully-designed and the content is strong.

The presence of the extensive formative evaluation program apparently caused a number of teachers to wonder if they were part of a study rather than a process that contained embedded evaluation. Maintaining shared cognitions over the purpose is something that needs attention.

The Perceptual World: Summary

From a vote-count perspective, all the components are doing nicely from the teachers' perspective with the collective initiatives apparently being in somewhat better shape than the IGF. However, it is not doing badly. All can use some design attention to ensure congruent cognitions about purposes and to extend comfortable and purposeful implementation.

The Ethnographic Study

The ethnographic report is excertpted and paraphrased from the document submitted to the school district by the consultant who conducted the participant-observation study. As mentioned, she was in the district for more than 60 days during the academic year. She provided consultant service on the language arts and action research to the teachers, schools, facilitation teams, principals district committees, cadre, and the central office planning teams. A major part of her assignment was to collect information both as a participant observer but also as an interviewer, observer of meetings, and observer of teaching, in order to depict the progress of the initiatives and their socio-professional context. These qualitative data were, where possible, integratedwith quantitative data on the progress of the initiatives.

The Narrative Report

This report is synthesized from several sources, some of which are impressions from our clinical exchanges and others from formal data collected while in the district or from district records. Specifically, for the district-wide action research on the language arts and on Models of Teaching, I have drawn on the following sources:

a. notes on nearly 100 (actually 97) observations in classrooms,

b. notes and documents from five formal sessions with the Language Arts/Cadre members,

c. logs of practices on Models of Teaching from the nine elementary schools,

d. data collected by the schools on the Just Read and Write initiative, specifically, numbers of books students read outside of school and writing opportunities provided in school,

e. student writing samples,

f. minutes from Cabinet meetings, and

g. two surveys of "concerns" completed by K-6 teachers.

For action research at the building level, I have drawn primarily on these sources:

h. field notes from 54 individual meetings of one to two hours each held in the schools with action research facilitator teams,

j. results of surveys of concerns from the action research facilitators,

k. accomplishment reports from four general sessions conducted with the action research facilitators, and

l. action plans and end-of-year reports from the eleven schools.

The report proceeds from the general to the specific, then deals with the implementation of the curricular and instructional components and, finally, progress and accomplishments in action research.

Accomplishments: Some Generalizations

In each goal area, there has been progress.

1) There is significant progress in the implementation of the language arts framework. Amount of outside-of-school reading by students has maintained at a level significantly above the baseline numbers collected early in 1991 and one school has made very large increases over last year. Reporting to parents with products of student performance and conferences about those products was favorably received by parents. There is significantly greater use of conceptual models of teaching in language instruction.

These good levels of implementation are apparently paying off. Some wonderful gains have been made in student writing skill. (See the report on writing quality.)

2) Progress has been made in conducting school-based action research, with faculties using schoolwide data to inform themselves of the effects of individual and collective action on common goals. While not all data used related directly to student learning, it is a major accomplishment for school faculties to collect and **use** data to make collective decisions. Schoolwide actions taken by the professional community ranged from providing students with clarification of classroom expectations for accountability and responsibility, to developing lessons to be used schoolwide to increase social responsibility, to collecting and studying samples of student writing, to developing lessons to increase student skill in writing.

3) With respect to the enhancement of professional community, the data are much softer; however, progress has been made in developing common understandings around a framework for language arts curriculum, instruction, and assessment; in massing collective energy and commitment to **work together** to improve student learning; and in broadening and strengthing the leadership base among teachers. Also, not without difficulty or controversy, the faculties have demonstrated that they can implement the "Just Read" program and have brought about a higher level of independent reading for many of the children in the district.

Each component has had its specific successes and alerted us to avenues to take in the future.

The Components and their Levels of Implementation

Language Arts and Models of Teaching

Student gains were made in a vital area: written communication. In the elementary schools, the average gain this year in some important areas, such as the ability to focus and organize expository writing, an area that has been, nationwide, difficult to improve, was several times the annual gains previously seen in Ames or in the nation as a whole. In terms of effects on student achievement, we cannot identify or apportion how much student gains in writing were influenced by the increased attention given to writing, by the increased outside-of-school reading done by students, and by the

implementation of inductive, concept attainment, and cooperative-inductive models of teaching. What Ames Community Schools educators do have is some potent evidence that when they marshall their collective will, they can move beyond present achievement and expectations rapidly.

Implementation of Models of Teaching. Logs, corroborated by observations and interviews, indicate that the use of Models of Teaching has increased substantially since last fall. The current mean use per teacher for April for the nine elementary schools was approximately 4.2 inductive lessons per week and 3.2 concept attainment lessons per week, with school means per teacher for thecombination of models ranging from 2 to 6 lessons per week. Five or six uses is considered optimal by the students of Models of Teaching. Nearly half of the folks have reached that level. Possibly we need to consider altering the configuration of support for the schools where use is lowest.

Implementation of the curriculum. Progress continued to be made in implementing an integrated language arts curriculum in grades kindergarten through six. Members of the Language Arts Cabinet and many members of the Models of Teaching Cadre continued their concentrated efforts to move forward in language arts: they conducted staff development sessions, made videotapes, shared with parents and community members the procedures and operations of the language arts program, and held formal and informal problem solving sessions. All this while those cadre members carried out their duties as teachers and principals.

To get a close look at curriculum and instruction as it exists in the reality of the classroom, I observed 97 teaching/learning episodes in 49 of the 112 elementary classrooms, concentrating on the language arts and the use of the models of teaching.

Materials Used. The primary instructional materials being used in language arts were, in descending order of frequency, trade books for independent and group reading, students' writing journals, commercial worksheets, and materials created by teachers or students (such as graphs, learning games, and data sets from literature).

Instruction. The nature of the most common activities observed in language arts were, in descending order of frequency, students writing in journals and/or as part of Writers Workshop; students independent reading of tradebooks, magazines, and newspapers; and teachers reading aloud to students from classics. The most common group instruction observed across classrooms was the Daily Oral Language (DOL) lesson. I observed five inductive lessons (language arts, mathematics, and science) and two concept attainment lessons (language arts). I observed several outstanding interrelated lessons in which teachers had structured the activities so students were required to use skills from language arts, science, social studies, and mathematics, in cooperative groups, to accomplish their lesson tasks.

Social Organization of Students. Thirty-five of these 97 teaching learning episodes were predominantly total-class groups; twenty-two had students working independently; nine had students organized into small groups of two to eight; and six had students organized into formal cooperative learning groups. The other twenty-five episodes were a combination of total class, independent, and/or small group.

Some General Comments. Student engagement was substantial. The emphasis on oral language; opportunities to hear good literature, well-read; the level of independent reading occurring during the school day; and the regular writing in journals provides a language rich environment for all students. However, some areas for you to reflect on include providing more **instructional emphasis** on analysis of the structures of language, on higher order comphehension skills, on elevating the quality of written composition, and on engaging students more sharply in understanding how these skills support communication.

"Just Read"

The purpose of "Just Read" is to help develop a society of habitual readers, thus increasing self-educating capacity. A corollary purpose is to increase the amount of education students receive through reading--insuring that students read hundreds of books while in school. In addition, reading is an avenue for improving writing. Finally, reading independently is the surest way to consolidate the skills acquired through instruction, and skilled readers acquire vocabulary at a good rate if they read habitually, leading to the ability for more and more complex self-education.

There is enough data in the district records to make rough estimates of the program thus far. Judging from the weeks and months for which there were complete data, the approximately 3000 Ames elementary students read (out of school) about 300,000 books each of the last two years, or an average of about 100 books per child each year. The K-2 students read (or were read to, in the case of pre-readers) the most, with an average of about 150 books per year. The grade 3-4 students read about 60 books per year, and the grade 4-5 children about 45 books per year on the average.

Variance among schools is significant, with the students in the three schools with the best implementations reading about twice the number of books of the schools with the lesser implementations (still far above the national average). During the 1992-1993 school year, several of the schools tailed off somewhat, but one school increased the average to about eight books per week per child. That school, incidentally, serves the lowest socio-economic level students in the district.

It has been demonstrated that Just Read can be implemented successfully in Ames, and it represents a significant aspect of education for students. Different levels of implementation have created conditions of disequity, however, and the district needs to consider taking steps to ensure that the current gap, where students in one school are reading four times as much at home as students in some others, is not perpetuated.

General Information on Implementation

More teachers are developing lessons in writing and in reading comprehension that relate to how authors craft a piece and how they develop and unify a piece. Staff interest in the specifics of teaching students to own our language as a powerful tool increased as the year progressed. For example, the number of questions about how to teach integrated lessons and how to help students focus and organize a piece of writing increased steadily during the year. Questions asking help in connecting the models more fully to the conceptual base of the language arts are rising steadily as well.

Moving Forward in Action Research

Action research is disciplined inquiry. The value gained from conducting action research is determined by the faculty, whose members identify a common goal, how best to achieve it, and how to assess its attainment, always in terms of student learning.

Creating faculty synergy is the key. Thus, a major component of school improvment is the development of a colleagial decision-making organization in each school, including leadership teams, study teams, and mechanisms for democratic decision-making on major issues. When engaging in schoolwide action research, school faculties are asked to learn how to study student learning and to generate initiatives that fit the needs of their sites.

In Ames Community Schools, all eleven faculties learned something this year about conducting action research. How useful this learning was and its degree of direct impact on student learning

varied from school to school. Thanks to the coordinator and a local consultant, and the tremendous time commitment of many facilitators, the technical and social dimensions of conducting action research improved in most schools: establishing a common goal, collecting and organizing data, and taking action indicated by the goal and by the data being collected.

Eight school faculties were able to keep the focus on student achievement a dominant factor in their action research. This may sound like a given considering the Phase III goal, but it is extremely rare in school-based improvement efforts (David and Peterson, 1984; Calhoun, 1992; Coalition, 1993). In one four-year study of school faculties engaging in schoolwide action research, approximately one-fourth of the schools were able to establish a common student learning goal during their first year; about one-fourth more the second year, about one-fourth more the third year; and the rest gave up or continue to set goals around school discipline, student self-esteem, curriculum development but not implementation, or teacher accomplishments rather than student accomplishments.

This year, seven of the nine faculties collected schoolwide student behavioral data of one or more types; this is in sharp contrast to the predominance of perceptual data, or in some cases no data, collected during the first year. Faculty-wide study of professional literature around their goal at five schools appeared to provide some faculties with more options and actions to take in pursuing their goal.

Based on meetings with facilitator teams and on the end-of-year reports prepared by each school facilitator team, seven school faculties know more about student achievement now than they did ten months ago. This is especially true in the area of writing in three schools, and in technology, vocabulary, reading comprehension in other schools. What these faculties learned as communities about student learning and progress may be the most important result thus far.

Two elementary school faculties made particular progress this year in working together to develop common goals in schools where many members were heavily invested in individual goals and where role relationships and leadership roles were changing as facilitation teams created a bery different scene of shared governance than had existed before. The facilitators, teachers, and school administrator in those buildings did not give up, but persisted until they had majority agreement on common goals.

The action research coordinator was the fulcrum of much of the process. He has worked with the action research facilitators to help them maintain a high level of active participation and solicited input from as many staff members as possible in each school. He has worked individually and with small groups to solve problems of data presentation and providing the rationale for schoolwide data collection and study. He has met with total school faculties four times since January to answer their questions about and respond to their concerns about the action research process and to expand their understanding of schoolwide action research and its goals. His negotiating skills, his credibility and care for his colleagues, and his commitment to collective action and disciplined inquiry for school improvement enhanced the technical support role he provided.

The school faculties in general have reached a stage of progress in action research greater than that in any previous reported study of school-wide action research, with several of the faculties generating initiatives in curriculum and instruction and proceeding to implement them. Differences between school appears to be due both to the cohesiveness of the leadership teams at the schools and to the ability of those teams to ensure that the faculty as a whole are continuously aware of objective data about student learning and the progress of implementation of agreed-on initiatives. Only initiatives that impact curriculum and instruction pay off in terms of student achievement and more can be accomplished in every school.

I feel that changes had occurred in terms of increasing organizational unity within the community, especially in moving from attention given to individual stars and small constellations to using much more of the individual talent collectively to attain the districts' primary organizational goal: helping all students learn. The expanding teacher leadership base is particularly noteworthy. Teacher-leaders repeatedly spoke up and promoted a districtwide, "professional community" focus on enhanced student learning. The increasing strength and leadership skills of these teachers are especially powerful because of their **dual focus on enhanced education for all students as well as their concern for the complexities of change and its effects on their colleagues.**

The Study of Quality in Writing

The study was created to support what can be termed "district-wide action research" and concentrated on comparing samples of writing for grades four, six, and eight from the early Fall of 1992 and the late-Spring of 1993 Expository, Narrative, and Persuasive genres.

Why is writing the focus?

Writing was selected as the focus for the study for a variety of reasons, despite the fact that the study of writing is technically demanding and exceptionally labor-intensive. Because American schools have had great difficulty affecting the development of competence in writing, quality of writing represents a severe test for a school-improvement program. In terms of the capability of the district faculty to increase student learning, we are fairly certain that if it knows it can increase competence in writing, then the faculty can have confidence that it can have success when energy is directed toward any other curriculum area. The efforts in the implementation of the language arts curriculum, the study of models of teaching that can further the reading-writing connection, the Just Read program, and the action research program all can theoretically contribute to improvement in quality of writing. This study was designed to explore whether improvement occurred.

Relation to the National Assessment of Educational Progress

The design and results of the National Assessment of Educational Progress provide important aspects of the backdrop for the present study. The national study provides information about the general progress made by students between the fourth and twelfth grades, and aspects of the findings can be used as a basis for comparison with the situation in Ames. Also, the national assessment employs a system for analyzing competence in writing that can be applied across the grades, permitting fairly precise year-to-year comparisons to be made. The national assessment and the present study used instruments that are comparable and were derived from the same source.

Among its other findings, the national assessment discovered that progress in quality of writing is gradual, to say the least. The average score of the eighth grade students was at the 67th percentile of the fourth grade distribution, and the average score of the twelfth grade students is at about the 80th percentile of the fourth grade students. Roughly speaking, there is an average annual gain of about 3.5 percentile points. In "effect size" terms, the average year-to-year gain is about 0.10, which translates to about 3.5 percentile-points per annum at the mean of a normal distribution. Probably the gain is little more, if any, than developmental. The finding illustrates the difficulty American schools have had in the writing area. The national study also indicated that students in general have the greatest difficulty in expository and persuasive writing. An unnerving finding from the national assessment is that there is a serious gender difference that widens over the grades. By the twelfth grade the median score for males is at the 32nd percentile of the female distribution.

Ames: The Baseline from 1991-1992

Judging from the results of the analyses conducted during the 1991-92 school year over writing samples collected from all the fourth, sixth, and eighth grade students, the children in the Ames schools have been progressing at an effect-size rate of about .14, or almost half-again the national average. This translates to a gain, at the mean, of about five percentile points. Thus, in 1991-92 the average Ames sixth grade student on the dimension "Focus and Organization" was at about the 60th percentile of the fourth grade distribution. Year-to-year differences on the other two dimensions of the scale appear to be similar. Essentially, because the differences accumulate year-to year, an Ames student who began the fourth grade at the 50th percentile of the national average would graduate from the twelfth grade well-above the highest-scoring fourth grade student, whereas a counterpart in an average United States district would end up at the 80th percentile of the fourth-grade distribution. Current efforts to improve writing instruction, as the one in Ames, seek to accelerate growth in all aspects of quality in writing.

Design

This study, by collecting samples in the Fall of 1992 (last week of September) and Spring of 1993 (last week of April/first week of May), was designed to learn whther changes occurred during the year and, if so, of what magnitude.

Stimuli and Prompts for Writing

Standard prompts to elicit writing in the expository, narrative, and persuasive domains were presented to all the fourth and sixth grade students in each of the elementary schools. The stimuli were presented in written form, although, in the expository domain the students observed visually the subjects they were to write about (a tree, the media center). Thirty minutes were allotted for responses.

Sample Size and Selection

All the fourth, sixth, and eighth grade students responded to the prompts. For analysis, a random sample of six students was identified from 17 fourth and 15 sixth grade classes in the eight elementary schools. The maximum possible number of fourth grade students was 102. Due to absence, transfer, and such there are 95 fourth grade students for whom both Fall and Spring writing samples were scored. For the sixth grade the maximum possible was 90 and, for the foregoing reasons, there were 77 students for whom both Fall and Spring samples were scored.

Scoring

The scoring system is the basic one developed at the UCLA Center for the Study of Evaluation, a version which is used in the study of writing progress as part of the National Assessment Program. The scale is generic. That is, it is criterial and can be used to analyze the writing of persons of all ages and stages of development. Consequently, it permits the assessment of growth in writing as students progress through the grades. Raters are trained to assess writing from persons of all ages according to the same criteria. Three dimensions of writing quality are assessed for each type of writing: focus and organization, support and elaboration of ideas, and grammar and mechanics.

For this study, the raters practiced again until the correlation between their ratings was above 0.90 and repeatedly checked their reliability against a set of writing samples for which scores had been established. Overlapping rating permitted regular checks for reliability. Also, where a rater indicated uncertainty about the correct score, the sample was rated by two other raters. In those cases,If two of

the three raters agreed, their score was used. In the cases where all three produced different scores, they were averaged. In the more than 700 samples that were analyzed, averaging was necessary only ten times.

Results: Grade Four

The focus of this report is the comparison of the distributions of scores obtained from the analysis of the Fall and Spring writing samples for grades four and six.

Grade Four Expository Writing

Table 1 compares the means for the two periods (Fall, 1992, and Spring, 1993) for the three dimensions for which quality was assessed (Focus/Organization, Support, and Grammar and Mechanics.) Altogether, the scores for 95 students were compared.

Table W1

Mean Grade Four Scores on Expository Writing for Fall, 1992, and Spring, 1993

	Dimensions		
Period	Focus/Org	Support	Grammar/Mechan.
Fall			
Mean	1.6	2.2	2.11
SD	0.55	0.65	0.65
Spring			
Mean	2.8	3.2	3.0
SD	0.94	0.96	0.97

In the Fall, coefficients of correlation between FO and SUP and GM were .56 and .61 respectively and between SUP and GM was .63. In the Spring, these wer .84,.65, and .74 respectively.

Effect sizes were computed between Fall and Spring scores were, for FO, 2.18, for SUP, 1.53, and GM, 1.37.

All these are several times the effect-sizes of the national sample and of the baseline gains determined from the 1991-1992 analyses. For Focus and Organization, the differences are so great that the average student reached the top of the Fall distribution, something that does not happen nationally during the entire time of schooling from grades four to twelve. The average twelfth grade student has a much greater vocabulary, knowledge, and general command -- these effects are simply for the dimensions that were scored.

To illustrate the magnitude of the difference, Table 2 compares the mean results for the Spring fourth-grade assessment to the sixth grade Fall results.

Table W2

Mean Grade Four Spring, 1993, Scores on Expository Writing
Compared with the Mean Grade Six Scores from Fall, 1992

	Dimensions		
	Focus/Org	Support	Grammar/Mechan.
Grade Four Spring Mean SD	2.8	3.2	3.0
Grade Six Fall Mean SD	2.11	2.90	2.87

The fourth grade students ended their year substantially ahead of where the sixth grade students were at the beginning of the year.

The findings are particularly interesting to us not only because of their magnitude but also because expository writing has traditionally been much more difficult to impact through instruction or practice than has narrative writing. Also, the focus/organization dimension has been the most difficult to influence, and competence in the ability to focus and organize a piece of writing has lagged seriously behind the ability to support ideas once selected and the ability to use mechanics to enhance the expression of ideas. As indicated earlier, much of the concentration of the Models of Teaching/Language Arts initiative was concentrated on expository writing.

We estimate that a level four on the scale represents the minimum necessary to manage the tasks of secondary education successfully. In the Fall, taking all three dimensions together, just 11 percent of the fourth grade writing samples were rated at level four or above on one or more dimensions. In the Spring, 30 percent were so rated. Once the competence to generate a level of that magnitude has been reached on one or two dimensions, practice and expert instruction should result in a consolidation of all dimensions at that level or higher.

Scores below level two indicate that students are still struggling to express themselves. Once level two is reached, progress becomes much easier, provided, that there is much practice and expert instruction. The fourth grade mean in the Fall was only 1.6 in the focus-organization dimension, indicating that the average student was only in the beginning stages of learning to focus a piece of expository writing. Only 15 percent of the papers were rated "2.0" or better on the focus-organization dimension. In the Spring, only 15 percent were rated below 2.0.

The effects are consistent across schools. All the schools achieved substantial effects. The only difference is that between-school variability has decreased because some of the schools that traditionally have had somewhat lower achievement than the others gained substantially, reaching the district average or above.

Results: Grade Six Expository Writing

Table 3 compares the means for the two periods (Fall, 1992, and Spring, 1993) for the three dimensions (Focus/Organization, Support, and Mechanics).

Altogether, the Fall and Spring scores for 77 students were compared.

Table W3

Mean Grade Six Scores on Expository Writing for Fall, 1992, and Spring, 1993

Results	Dimensions		
	Focus/Org	Support	Grammar/Mechan.
Fall			
Mean	2.11	2.90	2.87
SD	0.56	0.72	0.67
Spring			
Mean	3.09	3.59	3.41
SD	0.69	0.68	1.00

Coefficients of correlation between FO and SUP and GM in the Spring were, respectively, 0.59 and 0.57. Between SUP and GM, the coefficient was 0.48. For Spring, coefficients were 0.7, 0.58. and 0.67.

The effect size of the differences between Fall and Spring are, for FO: 1.75, SUP: 1.10, and GM: 0.81.

All these are several times the effect-sizes for the national sample and for the Ames Baseline. For Focus and Organization the effect-size is actually five times the national average and about three and a half times the average for the Ames baseline.

To illustrate the magnitude of the difference, Table 4 compares the results for the Spring sixth-grade assessment to the eighth grade Fall results.

Table W4

Comparison of Means of the Spring Grade Six Expository Writing Scores with the Fall Grade Eight Scores

	Focus	Support	Mechanics
Mean Gd 6 Spring 1993	3.06	3.55	3.57
Mean Gd 8 Fall, 1992	2.33	2.95	3.32

The sixth grade students ended their year substantially ahead of where the eighth grade students were at the beginning of the year.

Again, on the scale, level four is important because it indicates the competency to meet the tasks of secondary education. In the Fall, 17 percent of the scores on one or another of the dimensions were at level four or above. In the Spring, over 50 percent were at level four or above. No scores were below 2.0. Only one-sixth of the dimension-scores were below 3.0.

As in the case of grade four, all schools made comparable gains, although variance decreased somewhat because some of the traditionally lower-achieving schools narrowed the gap between their students and the others. The success is district-wide.

Persuasive Writing

Grade Four

The National Assessment of Educational Progress indicated that persuasive writing is in relatively bad shape and that progress across the grades has been relatively small. For the Ames fourth grade, the means for the Fall samples in persuasive writing were consistent with the national picture. The mean in persuasive writing in "Focus and Organization" was about 0.2 scale-score points below the score for expository writing and the mean for "Support" was about 0.7 scale-score points lower than the comparable score for expository writing. However, as can be seen in Table 5, substantial progress was made on both dimensions during the academic year 1992-93.

Table W5

Mean Fall, 1992, and Spring, 1993, Scores for Persuasive Writing for Grade Four

Results	Dimensions		
	Focus/Org	Support	Grammar/Mechan.
Fall			
Mean	1.45	1.33	2.31
SD	0.53	O.60	0.73
Spring			
Mean	1.70	2.36	2.54
SD	0.65	0.64	0.73

Spring correlations between FO and SUP and GM were o.51 and 0.35 respectively and between SUP and GM was 0.27. In the Fall, these were 0.43, 0.31, and 0.55.

Anova comparing the Fall and Spring scores were significant for all three dimensions.

Effect-sizes were, for Focus: 0.47, for SUP: 1.71, and for GM: 0.32.

Although the gains by the Ames students were much larger than the national gains, the mean in the Spring for focus and organization is still below 2.0, indicating that the students are still struggling to express themselves with this type of writing and future efforts to improve the ability to work in the persuasive genre are indicated. By far the largest gains were on the support dimension: the mean Spring scores on the support dimension are above those with which the sixth grade began the year and are virtually equal to those with which the eighth grade began the year. There were just two dimension-scores (out of 285) rated at level four. Between the focus/organization and support dimensions, 25 percent were rated at three, however, which means that some of the students are beginning to spread their wings in the genre.

The achievement is considerable, but obviously much more can be achieved. The successes provide much promise for the future.

Grade Six Persuasive Writing

Table W6 compares the mean scores on persuasive writing on the three dimensions for the two periods.

Table W6

Mean Fall, 1992, and Spring, 1993, Scores for Persuasive Writing for Grade Six

Results	Dimensions		
	Focus/Org	Support	Grammar/Mechan.
Fall			
Mean	2.01	2.11	2.60
SD	0.72	0.81	0.75
Spring			
Mean	1.94	2.49	3.00
SD	0.72	0.71	0.53

Coefficients of correlation for the Fall are, for FO with SUP and GM, 0.60 and 0.65, respectively and, between SUP and GM, 0.48. In the Spring, these are 0.64, 0.46, and 0.56.

The effect-sizes were, for the focus dimension: -0.13, for support, 0.47, and for GM, 0.53.

The growth in the persuasive dimension was in the support and mechanics dimensions -- about a half scale-score point in each. There was essentially no gain in the focus/organization dimension. The number of scores at level three was about level (33 to 36), and a few more scores were at level four (3 to 9).

The gains are indicators of substantial growth, but focus and organization are critical to this genre, and much effort needs to be put into this area and its integration with support. Because of the substantial gains in the focus/organization in the expository genre, there is little doubt that comparable gains can be made in the persuasive area, provided careful instruction is given.

Narrative Writing in the Fourth Grade

Table W7 compares the means for narrative writing for the two periods and the three dimensions of the scale.

Table W7

Mean Fall, 1992, and Spring, 1993, Scores for Narrative Writing for Grade Four

Results	Dimensions		
	Focus/Org	Support	Grammar/Mechan.
Fall			
Mean	2.26	2.52	2.75
SD	1.09	1.04	1.15
Spring			
Mean	2.98	2.98	2.89
SD	0.96	0.91	0.90

In the Fall, the coefficients of correlation between FO and SUP and GM were 0.51 and 0.35 respectively and for SUP with GM was 0.27. The comparable coefficients for the Spring were 0.43, 0.30, and 0.56.

The effect sizes for FO was 0.66, for SUP was 0.44, and for GM was 0.24.

The gains in focus and support are substantial. The gain in mechanics was very small, but the Fall scores were much higher than for the other two types of writing. The much higher standard deviations than in the other dimensions is interesting. In the Sping about 10% of the students had reached level four on two or even three dimensions, whereas about 10% were at or below level two.

Grade Six Narrative Writing:

Results	Dimensions		
	Focus/Org	Support	Grammar/Mechan.
Fall			
Mean	3.47	3.77	4.12
SD	1.19	0.90	0.80
Spring			
Mean	2.85	3.03	2.67
SD	0.98	0.83	1.01

The coefficients of correlation for the Fall between FO and SUP and GM were 0.75 and 0.53 respectively. The coefficient between SUP and GM was 0.35. For the Spring, they were 0.83, 0.46, and 0.48 respectively.

The results are puzzling. The Spring scores of quality were quite high for sixth grade, but generally writing quality measures do not descend appreciably, particularly after a fairly high level has been attained and particularly under conditions where instruction is calculated to expand writing repertoire. Also, the scores on the other two genre for the same students improved appreciably. Plans have been made to assess writing with a variety of stimuli and prompts, which, in addition to providing a richer base for understanding the writing of all the students, will permit a broader and more intensive look at the writing of these students.

The Theses: Evidence from the Ames' Study

On motivation, credibility, and "buyin" --

Thesis MCB1: Start with a group of enthusiasts, and, when the others see what they are doing, they will buy in.

Corollary thesis MCB2: Action research is best conducted by individuals and small groups.

Thesis MCB3: Schoolwide action research knits the faculty and gets results for children.

Thesis MCB4: Commitment to an innovation follows competence, rather than preceding it.

The Ames study did not address MCB1. MCB2 was not addressed in a comparative mode, but certainly the school-wide action research modality receives support from the study, both in terms of effectiveness in generating initiatives and satisfaction and also in improving cohesiveness, which supports MCB3. The positive reception of the Models of Teaching and Language Arts Framework has some relevance to MCB4, although there was no baseline with which to compare.

On central planning --

Thesis CP1: Carefully articulated initiatives in curriculum and instruction generate colleagueship and bring about changes in curriculum and instruction that are satisfying to teachers and effective for students.

Thesis CP2: Centralized initiatives are doomed to failure because of resistance, legitimacy, and lack of "buyin."

Thesis CP1 receives very strong support from the Ames study, and there is considerable evidence that CP2 will not hold up. Again, the fact that a carefully-articulated and supported central initiative can succeed and generate satisfaction does not imply that personal initiatives or school-wide collective initiatives should not be used., for, although they generated less unqualified support and less clear effects than the district-collective modality, they were positively received by many teachers and can be engineered to generate more.

On the culture of the school --

Thesis CS1: Begin with the development of colleagiality, then initiatives will emerge.

Thesis CS2: Begin with initiatives and generate collegiality through action.

The design did not generate evidence pertinent to the relative merits of Theses CS1 or 2. However, there is food for thought in that the particular type of faculty-collective strategy used here, the school-wide action research modality, that emphasizes action to collect data from the beginning, had success, as did the district-collective mode that emphasized a strong set of initiatives from the outset.

On time and the culture of the school--

Thesis TCS1: The implementation of an initiative in curriculum, instruction, or technology takes three years or more.

Thesis TCS2: Well-designed initiatives can be implemented during the first year.

Thesis TCS3: Changing the culture of the school takes from five to ten years.

Thesis TCS4: Well-designed initiatives can change the culture of the school immediately in certain ways, and by steady increments create self-renewing schools and school districts.

The Ames evidence strongly supports TCS2, including evidence of effects on student learning. Complete maturation and institutionalization of an initiative probably take longer, but the evidence here would not indicate merit in a gradualistic approach.
With respect to TCS3 and 4, it appears that certain structural changes and interactive patterns can be affected rapidly. Perhaps "waiting for readiness" by emphasizing collegiality before initiating change in educational environments would be a better strategy, but waiting too long before practicing change strategies might be damaging also. There was no evidence in the Ames study that initiatinng action prevented satisfaction or a level of implementation sufficient to affect student learning.

On age and experience

Thesis A1: Age decreases motivation and the stresses of teaching lead to "burnout."

Thesis A2: Maturity increases strength as learners and problem-solvers.

Age was not a factor in satisfaction or implementation of any of the three modalities of staff development. **There was no age trend at all**. There is strong evidence for the rejection of A1.

On technical assistance and research

Thesis TA1: To get "moving" most schools need technical support, especially to bring the research base to bear on problem-solving.

Thesis TA2: Knowledge is personal and situation-specific. External sources provide little of value to local problem-solving.

In the case of Ames, extensive technical support was provided, so there is no direct test of TA1. However, the levels of implementation of the faculty-collective and district-collective modes were both much higher than in the literature where those modes are attempted with minimum training or technical support. With respect to TA2, the external sources of knowledge genrated considerable change in curriculum and instruction with considerable effects on students. Thesis TA2 is tenuous at best.

On Student Achievement and Staff Development

Thesis SDSA1: There is a link between student achievement and staff development.

Thesis SDSA2:There is no link between student achievement and staff development.

The Ames evidence strongly supports the link between student achievement and staff development.